

# CITY OF KIRKLAND



## 2011

# **STORMWATER MANAGEMENT PROGRAM (SWMP)**

 Prepared March 2011



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Public Comment: Denny Creek Neighborhood Alliance

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# CITY OF KIRKLAND

## 2011 STORMWATER MANAGEMENT PROGRAM (SWMP)

Prepared March 2011

### 1. INTRODUCTION

#### 1.1 THE PURPOSE OF THE STORMWATER MANAGEMENT PROGRAM DOCUMENT

This document constitutes the City of Kirkland 2011 Stormwater Management Program (SWMP) as required under condition S5 of the *Western Washington Phase II Municipal stormwater Permit* (the Permit). The purpose of the document is to detail actions that the City of Kirkland will take between January 1, 2011 and December 31, 2011 to maintain compliance with conditions in the Permit. This SWMP will be an attachment to the Annual Compliance Report for the Permit for 2010, which is due at the Department of Ecology on March 31, 2011.

#### 1.2 THE NPDES PROGRAM

The National Pollutant Discharge Elimination System (NPDES) is a program created under the Federal Clean Water Act with the intent of protecting and restoring water quality in lakes and stream so that they can support “beneficial uses” such as fishing and swimming. Governmental and private entities wishing to discharge water or wastewater to surface waters regulated by the Federal Government (Waters of the US) must obtain permits and comply with certain conditions or face fines and other penalties. NPDES permits have been written for discharges from construction sites, concentrated animal feeding operations, industrial activities, publicly-owned wastewater treatment plants, and municipal stormwater systems.

In Washington State, the US Environmental Protection Agency has delegated the authority over NPDES permits to the Washington State Department of Ecology (Ecology). Ecology has issued several general permits for discharges from stormwater systems that apply to municipalities with different sizes of populations and that are located in different regions of the State (Eastern and Western Washington). Phase I refers to municipalities of >100,000, and Phase II to those with a population of less than 100,000 according to the 1990 census.

#### 1.3 THE WESTERN WASHINGTON PHASE II MUNICIPAL STORMWATER PERMIT

Kirkland has a population of less than 100,000 and is in Western Washington. Thus our stormwater program must comply with conditions in the *Western Washington Phase II Municipal Stormwater Permit*. The Permit was issued on February 16<sup>th</sup>, 2007, and will remain in effect until February 15<sup>th</sup> of 2012. A Permit allows municipalities to discharge stormwater from municipal systems into “waters of the state” such as rivers, lakes and streams, as long as we implement programs to reduce pollutants in stormwater to the “maximum extent possible” by conducting programs and activities in the following program areas:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination
- Construction and Post-construction runoff controls
- Pollution Prevention and Municipal Operations and Maintenance
- Monitoring

**TABLE 1:**  
**TIMELINE OF IMPLEMENTATION OF STORMWATER MANAGEMENT PROGRAM**

Permit Section	Requirements	Deadline	2007				2008				2009				2010				2011				2012			
			1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
S5.	STORMWATER MANAGEMENT PROGRAM (SWMP)																									
S5.A.	SWMP FULLY developed and implemented	08/19/2011																								
	Start Tracking SWMP Costs	01/01/2009																								
S5.C.1	Public Education and Outreach																									
	Provide education and outreach program	02/15/2009																								
S5.C.2	Public Involvement and Participation																									
	Public participation in SWMP development	02/15/2009																								
S5.C.3	Illicit Discharge Detection and Elimination																									
	Implement illicit discharge detection and elimination program	08/19/2011																								
	Map storm sewer system	02/15/2011																								
	Adopt ordinance to prohibit illicit discharge	08/15/2009																								
	List a hotline	02/15/2009																								
	Field staff trained	08/15/2009																								
	Implement on-going training program	02/15/2010																								
	Prioritize receiving waters for visual inspection	02/15/2010																								
	Field assessments of <b>three</b> high priority waterbodies	02/15/2011																								
	Fiels assessment of <b>one</b> priority waterbody	02/15/2012																								
	Distribute public education and outreach information	08/19/2011																								
S5.C.4	Control Runoff from New Development, Redevelopment and Constuction Sites																									
	Adopt ordinance for new development, redevelopment, and construction site projects	02/15/2010																								
	Plan review, inspection and enforcement strategy in place	02/15/2010																								
	Provisions to verify O&M of post-construction stormwater facilities and BMPs	02/15/2010																								
	Staff trained	02/15/2010																								
S5.C.5	Pollution Prevention and O&M for Municipal Operations																									
	Develop and implement O&M Program	02/15/2010																								
	Inspect all catch basins and inlets	02/15/2012																								
S8.	MONITORING																									
S9.	REPORTING REQUIREMENTS																									
S9.A.	Submit Annual Reports																									
	First Annual Report (including SWMP document)	03/31/2008																								
	Second Annual Report	03/31/2009																								
	Third Annual Report	03/31/2010																								
	Fourth Annual Report (including status of monitoring program)	03/31/2011																								
	Fifth Annual Report	03/31/2012																								



## 1.3 THE WESTERN WASHINGTON PHASE II MUNICIPAL STORMWATER PERMIT (CONTINUED)

The SWMP must be prepared and submitted annually and must contain the planned actions and activities that will be used in the following year to gain compliance with the permit. In addition, the Permit requires the City to submit an Annual Compliance Report by March 31<sup>st</sup> of each year that details actions taken in the previous year to achieve compliance. The full text of the Permit is available at: <http://www.ecy.wa.gov/Programs/wq/stormwater/municipal/phasellww/wwphiipermmit.html> or can be viewed upon request by contacting the City of Kirkland at (425) 587-3850.

## 1.4 IMPLEMENTATION TIMING

The Permit is valid for 5 years, from February 17, 2007 to February 15, 2012, and allows for phased implementation of stormwater management programs and actions. Table 1 provides an overall of schedule and due dates.

A Permit modification was issued by Ecology on June 17, 2009. This revision moved deadlines from August 17, 2009 to February 17, 2010 for the following items:

- Adopt an ordinance to address runoff from new development, redevelopment, and construction projects (see Section 5 for details)
- Have a strategy, procedures, and process in place for plan review, inspection, and enforcement of the new code and design requirements noted above (see Section 5 for details)
- Have a program in place to verify operation and maintenance of post-construction stormwater control facilities (see Section 5 for details)
- Verify that staff conducting plan review, inspection, and enforcement have proper training in the new or updated requirements for controlling runoff from new development, redevelopment, and construction sites, and provide additional training if needed (see Section 5 for details)
- In addition, other major activities due in 2010 include review and alteration (if needed) of city maintenance and operation procedures and programs to insure that they prevent stormwater pollution to the degree possible, and continued implementation of the Illicit Discharge Detection and Elimination (IDDE) program:
- Annual Compliance Report for activities conducted in 2009 is due March 31, 2010
- Annual written update of Permittee's Stormwater Management Program (SWMP – this document) must be attached to the Annual Compliance Report (therefore, the SWMP is also due on March 31, 2010)
- Continue activities that were due from the effective date of the permit through 2009
- Continue to develop an IDDE program by adding the following elements (see Section 4 for details):
  - o Implement an on-going training program for field staff
  - o Prioritize receiving waters for visual inspection
- Develop and implement an Operation and Maintenance Program (see Section 6 for details)

Kirkland this year will also be preparing for a major annexation which will become effective on June 1, 2011. The annexation area, which includes the Juanita, Finn Hill, and Kingsgate neighborhoods, is currently part of Unincorporated King County, and thus is covered under King County's Phase I Permit. Transition of surface water services for this area and coordination of Permit compliance needs will be a major focus of surface water staff in 2011.

Kirkland continues to be in position to meet deadlines and maintain Permit compliance.

## 1.5 CURRENT AND PLANNED ACTIVITIES

Each of sections 2 through 6 describes permit requirements, current activities, and planned activities for a specific piece of the Stormwater Management Program.

Although the focus of the SWMP document is on identifying upcoming deadlines and required actions to meet those deadlines, it should be noted that the bulk of on-going compliance activities are noted and discussed in the “current activities” section. As we move further into the Permit cycle, an increasing number of deadlines have been met and programs have been implemented. For this reason, a greater number of items appear in the “current activities” section, while fewer items appear in the “planned activities” section.

## 1.6 CITY COORDINATION AND RESPONSIBILITIES

Compliance with the Permit will require coordination and documentation of activities in several City departments. The Public Works Department Surface Water Utility staff will coordinate City efforts, and will meet with staff from other departments regularly to insure that on-going and planned activities meet Permit requirements. It is anticipated that activities required for Permit compliance will be carried out largely by the Public Works, Information Technology, Planning, Parks, City Manager’s Office (City Attorney), and Finance departments. The Fire/Building and Police departments will be involved to a lesser extent.

## 1.7 THE SURFACE WATER MANAGEMENT UTILITY - OTHER ACTIVITIES

This SWMP details activities that are planned and that fall under the purview of the Permit. Stormwater management is one part of the City’s overall surface water management strategy. The Surface Water Utility conducts a suite of programs that reduce flooding, protect and improve water quality, and protect and restore aquatic habitat in the City’s streams and lakes. Although not directly required, flood reduction and aquatic habitat restoration efforts can often further stormwater management goals. For details on Surface Water Utility activities not addressed in this SWMP, see the City website at [http://www.ci.kirkland.wa.us/depart/Public\\_Works/Storm\\_Surface\\_Water.htm](http://www.ci.kirkland.wa.us/depart/Public_Works/Storm_Surface_Water.htm) or contact the Public Works Department at (425) 587-3800.

## 1.8 THE PERMIT AS DOCUMENT MAP

The remainder of this document details the required elements of the SWMP as noted in Condition S5C of the Permit, and notes current and planned compliance activities. The subsection of Condition S5C associated with each section is noted in parentheses in the section on Permit Requirements.



## 2. PUBLIC EDUCATION AND OUTREACH

### 2.1 PERMIT REQUIREMENTS

The Permit (Section S5C.1) requires the City to provide a stormwater education and outreach program that will:

- Prioritize and address the target audiences and subject areas listed in the Permit based on stormwater issues and practices currently existing in Kirkland.
- Develop education and outreach programs that are designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.
- Measure changes in the understanding and adoption of behaviors by the target audience, and use that information to evaluate past programs, and to direct future programs.
- Maintain records of public education and outreach activities.
- Summarize activities in the Annual Report.

### 2.2 CURRENT ACTIVITIES

The City currently has activities and programs that meet the Permit requirements. Table 2.1 lists target audiences and behaviors that are currently being addressed by education and outreach programs.

**TABLE 2.1**  
**CURRENT EDUCATION AND OUTREACH PROGRAMS AND ACTIVITIES**

Item	Target Audience	Goal and/or Behaviors Promoted
Car Wash Kits	General Public (Fundraising Groups)	Proper discharge of wastewater into the sanitary sewer
Storm Drain Stenciling	General Public	Awareness, prevention of discharge of non-stormwater materials into the stormwater system
Natural Yard Care Neighbors Program	Homeowners	Reduce or eliminate use of herbicides and pesticides, reduce water usage, develop healthy soil
Newspaper inserts and newsletters	General Public, Homeowners	General awareness of stormwater impacts and issues
Elementary schools workshops program	General Public	General awareness of stormwater impacts and issues
Business license issuance/renewal information on best management practices	Businesses, Property Managers	Use of management practices that prevent discharge of pollutants into the stormwater system
Hazardous waste management/reduction	Businesses	Reduce waste creation, and dispose properly of hazardous waste that is created
Private drainage system inspection and technical assistance	Property Managers	Reduce discharge of sediment and uncontrolled high flows into the public stormwater system
Developers Forum	Engineers, Contractors, Developers, Review Staff, Land Use Planners	Increase awareness of technical standards for stormwater site and erosion control plans, Low Impact Development (LID) techniques and tools
Booths and displays at various special and on-going events	General Public	Raise awareness of stormwater impacts and ways that citizens can reduce these impacts

**TABLE 2.1 (CONTINUED)**  
**CURRENT EDUCATION AND OUTREACH PROGRAMS AND ACTIVITIES**

Source control technical assistance	Businesses	Work with businesses to develop practical methods of reducing or eliminating discharge of non-stormwater materials into the stormwater system
Pet Waste Outreach	General Public (Dog Owners & Walkers)	Proper disposal of pet waste
Volunteer Stewardship Projects	General Public	Raise awareness of the importance of stream buffers & ways that citizens can help improve them

In addition, the City participates with several other local jurisdictions in the Natural Yard Care Neighborhoods Program, and has conducted a survey of Kirkland participants in these workshops to determine their effectiveness at changing yard care behaviors and specifically pesticide use.

Kirkland has also been an active participant in the STORM (Stormwater Outreach for Regional Municipalities) Group to help identify appropriate program evaluation techniques.

The City tracks education and outreach efforts, and informally evaluates costs vs. benefits.

## 2.3 PLANNED ACTIVITIES

The City of Kirkland's stormwater education and outreach program currently targets a variety of audiences and behaviors. Activities to maintain compliance will center around prioritizing existing programs and developing new ones based on the audiences listed in the Permit, continuing to develop methods of evaluating, understanding and adoption of behaviors and of adjusting programs based on such evaluation, and tracking and maintaining records of public education and outreach activities. Table 2.2 summarizes education and outreach activities that are planned for 2010.

**TABLE 2.2**  
**EDUCATION AND OUTREACH WORK PLAN FOR 2011**

Item ID	Item Title	Additional Departments Involved	Schedule Notes
EDUC-1	Continue to prioritize existing programs, develop new programs based on NPDES education/outreach strategy	none	Continue through 2011
EDUC-2	Continue coordination and collaboration with other NPDES jurisdictions to identify opportunities for regional awareness and behavior change programs	none	Continue through 2011
EDUC-3	Continue to refine strategy and methods to evaluate changes in understanding and adoption of target behaviors	Planning	Continue through 2011
EDUC-4	Summarize annual activities for "Public Education and Outreach" portion of Annual report; update SWMP as needed	none	The SWMP and Annual Compliance Report submittal is due on or before March 31 of each year

## 3. PUBLIC INVOLVEMENT AND PARTICIPATION

### 3.1 PERMIT REQUIREMENTS

The Permit requires the City to :

- Create opportunities for public involvement through advisory councils, watershed committees, participation in developing rate-structures, stewardship programs and environmental activities of other similar activities. At a minimum, the public must be able to participate in the decision-making processes involving the development, implementation and update of the SWMP.
- Make the SWMP and Annual Compliance Report available to the public, including posting on the City's website.
- Summarize activities for the Annual Compliance Report.

### 3.2 CURRENT ACTIVITIES

The City currently has activities and programs that meet the Permit requirements. Such activities include:

- Posting of the draft SWMP on the City's website along with an invitation to the public to submit comments on the document. The public was also invited to comment on the City's overall Surface Water Management Program (which encompasses the SWMP) through the 2011-2012 budget process.
- The City plans to post the final SWMP and Annual Compliance Report on the City website.

### 3.3 PLANNED ACTIVITIES

The City plans to continue to solicit input on the SWMP and other aspects of the Stormwater Program as shown in the table below:

**TABLE 3.1**  
**PUBLIC INVOLVEMENT WORK PLAN FOR 2011**

Item ID	Item Title	Additional Departments Involved	Schedule Notes
PUB-1	Conduct public involvement process for 2011 SWMP	City Manager's Office	To be complete by March 31, 2011
PUB-2	Post SWMP and Annual Report on City website	Information Technology	To be complete by March 31, 2011
PUB-3	Refine public involvement process for 2010 SWMP	City Manager's Office	To be complete by December 31, 2011
PUB-4	Summarize annual activities for "Public Education and Outreach" portion of Annual Compliance Report; update SWMP as needed	none	The SWMP and Annual Compliance Report submittal is due on or before March 31st of each year
PUB-5	Refine and expand public involvement process for overall stormwater management program	none	on-going

## 4. ILLICIT DISCHARGE DETECTION AND ELIMINATION

### 4.1 PERMIT REQUIREMENTS

The Permit (Section S5C.3) requires that the City:

- Develop an ongoing program to detect and remove illicit connections, discharges, and improper disposal including spills into the municipal stormwater system.
- Develop a municipal storm sewer map that includes attributes of stormwater system outfalls and notes receiving waters.
- Develop and implement an ordinance to prohibit non-stormwater discharges and dumping into the stormwater system.
- Publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. Track reports of discharges and actions taken to address the reported problem.
- Provide training for municipal field staff on the identification and reporting of illicit discharges into the stormwater system.
- Conduct process to identify and prioritize areas likely to have illicit discharges. Such a process could include evaluating land uses and associated business/industrial areas, noting areas where complaints have been registered in the past, and identifying areas where large quantities of materials are stored that could result in spills.
- Conduct visual inspection of at least three high-priority water bodies by February 17, 2011, and then conduct visual inspection of at least one high-priority water body each year thereafter.
- Adopt and implement procedures for program evaluation and assessment.
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
- Summarize activities for the Annual Compliance Report.

### 4.2 CURRENT ACTIVITIES

The City currently conducts activities that meet the Permit requirements. Current illicit discharge detection and elimination (IDDE) activities that are part of Permit compliance include:

- Maps and an associated GIS database have been created for the municipal separate stormwater system. Mapping of the private stormwater system is underway. Standard procedures are in place for maintaining the GIS database to document new connections, changes/alterations to existing system, and changes based on field verification. Drainage areas and land use have been identified for outfalls 24" or greater in size. Maps are available to Ecology and to co-permittees and secondary permittees upon request in electronic format.
- Kirkland Municipal Code Chapter 15.52 prohibits illicit discharges, and provides for progressive enforcement actions and penalties. Code was updated in 2009 to meet Permit requirements.
- The city has taken steps to identify and eliminate illicit discharges including the following:
  - Completed the study *Stormwater Pollutant Hot Spots Assessment for the City of Kirkland* (Parametrix, January, 2008) that identifies potential pollutant sources based on land use, traffic volumes and other data and makes recommendations for addressing potential hot spots.
  - Field assessment and screening of outfalls has been completed for the mainstem and Totem Lake tributaries of Juanita Creek watershed, and for a subbasin of the Moss Bay watershed. This work satisfies the requirement to conduct field assessment and screening of three high-priority water bodies.
  - Water quality complaints and reports of spills or dumping are investigated on average within 7 days of receipt and are resolved by referring the call to the appropriate party and/or by tracing pollutant sources and working with the responsible party or property owner to remove the source of the discharge.
  - A phone number 425-587-3800 (the public works front counter) is publicly listed for public reporting of spills and other illicit discharges, and is publicized as a reporting hotline. Records are kept of calls received, and actions taken as a result of these calls.

- The City has programs to educate businesses, and the general public about the hazards associated with improper disposal of waste through the King County Local Hazardous Waste Management Program, source control visits to businesses by City staff, and general awareness campaigns.
- Source control visits were conducted with businesses in the Totem Lake tributary of the Juanita Creek watershed in 2008 and 2009.

### 4.3 PLANNED ACTIVITIES

Kirkland currently conducts many activities to detect and eliminate illicit discharges, but will need to document procedures and add to current efforts as Permit requirements are phased in over the next several years. The major work items for continued compliance include the following:

- Continue to review and refine IDDE program.
- Continue to implement and refine outfall screening program.
- Continue to review and refine education programs on the hazards of illicit discharges, and on reducing pollutants in permitted non-stormwater discharges.
- Continue to verify that staff involved in illicit discharge detection and elimination program have adequate training.
- Continue to implement training program for field staff.

**TABLE 4.1**  
**ILLICIT DISCHARGE DETECTION AND ELIMINATION WORK PLAN FOR 2011**

Item ID	Item Title	Additional Departments Involved	Schedule Notes
IDDE-1	Develop City-wide IDDE program per Permit conditions	Police, Fire/Building, City Manager's Office	Continue through 2011
IDDE-2	Conduct field assessment of one high-priority water body (outfall screening)	none	To be completed each year
IDDE-3	Continue to review and refine education programs on the hazards of illicit discharges, and on reducing pollutants in permitted non-stormwater discharges	none	On-going
IDDE-4	Continue to verify that IDDE staff have adequate training, provide and document additional training if needed	none	On-going
IDDE-5	Continue to develop and implement on-going training program for field staff	Police, Fire/Building, Parks	Continue through 2011
IDDE-6	Summarize annual activities for "Illicit Discharge Detection and Elimination" portion of Annual Compliance Report; update SWMP as needed	none	The SWMP and Annual Compliance Report submittal is due on or before March 31st of each year

## 5. CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND CONSTRUCTION SITES

### 5.1 PERMIT REQUIREMENTS

The Permit requires that Kirkland develop, implement and enforce a program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction site activities. This program must include:

- Adopt an ordinance that addresses runoff from new development, redevelopment and construction sites.
- Adopt minimum stormwater design standards that are equivalent to the minimum technical requirements in Appendix 1 of the permit (i.e 2005 Ecology Stormwater Management Manual for Western Washington, equivalent Phase I Manual or one of the Manual options with a Kirkland-specific basin –planning overlay).
- Implement a program (permitting process) to review plans, inspect sites during construction, and to take enforcement action against those failing to follow approved guidelines or to provide facilities as required during plan review.
- Adopt codes and standards and develop practices to allow for non-structural preventative actions and source reduction practices such as Low Impact Development Techniques (LID) that use amended or native soils and vegetation to minimize runoff and remove pollutants from stormwater.
- Adopt an ordinance, maintenance standards, inspection procedures, and enforcement provisions to verify long-term operation and maintenance of permanent stormwater control facilities constructed after the effective date of the Permit.
- Provide for training staff on new/revised regulations, standards, processes and procedures.
- Provide training and outreach to the public including engineers and developers on the new codes, processes and procedures.
- Develop a process for centralized recordkeeping of activities associated with regulation of new development, redevelopment, and construction sites as required in the Permit.
- Summarize activities for the Annual Report.

### 5.2 CURRENT ACTIVITIES

- Kirkland currently has a program that meets Permit requirements. Current activities associated with controlling runoff from new development, redevelopment, and construction sites associated with Permit compliance include:
- The City implements a program to review plans, inspect sites during construction, and to take enforcement action against those failing to follow approved guidelines or to provide facilities as required during plan review.
- The Kirkland Municipal Code Chapter 15.52 was amended in 2009 to meet Permit requirements. Effective January 1, 2010, Kirkland adopted the 2009 King County Surface Water Design Manual, which has been deemed equivalent to the 2005 Ecology Stormwater Manual.
- The City has modified plan review, inspection, and enforcement procedures to address the new regulations.
- The City maintains records of review, inspection, and enforcement actions by staff.
- Kirkland makes copies of the Notice of Intent for Construction Activity and Notice of Intent for Industrial Activity available to the applicants for development permits.
- Staff continue to attend trainings on erosion control, low impact development (LID) techniques, and stormwater design models, standards and practices.
- Outreach to the development community and the public is on-going to insure that they are adequately aware of both Kirkland requirements and LID requirements/opportunities.
- The City modified its inspection of post-construction stormwater facilities to meet Permit requirements for inspection and documentation.
- Program is continuously being reviewed and refined to ensure consistent application of regulations and to create appropriate documentation.

### 5.3 PLANNED ACTIVITIES

- Kirkland currently has a program that meets Permit requirements (and that has met the February 16, 2010 deadline for these items). Actions for continued compliance include:
- Review inspection results for stormwater treatment and flow control facilities after construction, and submit modified inspection frequency request for private drainage system to Ecology if warranted.
- Develop a report on LID implementation that identifies barriers to use of LID, and that suggests measures to address the barriers per Permit condition S9.E4b.

**TABLE 5.1**  
**CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND**  
**CONSTRUCTION SITES WORK PLAN FOR 2011**

Item ID	Item Title	Additional Departments Involved	Schedule Notes
CTRL-1	Review inspection results for stormwater treatment and flow control facilities after construction, and submit modified inspection frequency request for private drainage systems to Ecology if warranted	none	On-going
CTRL-2	Develop a report on LID implementation that identifies barriers to use of LID, and that suggests measures to address the barriers per Permit condition S9.E4b	Planning	Submit information and report with the March 31, 2011 Annual Compliance Report
CTRL-3	Summarize annual activities for "Controlling Run-off from New Development, Redevelopment and Construction Sites" portion of Annual Compliance Report; update SWMP as needed	none	The SWMP and Annual Compliance Report submittal is due on or before March 31st of each year



## 6. POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS

### 6.1 PERMIT REQUIREMENTS

The Permit (Section S5C.5) requires the City to:

- Develop and implement a municipal operations and maintenance program that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.
- Adopt maintenance standards that are as protective as those noted in the *2005 Stormwater Management Manual for Western Washington*.
- Perform inspection of municipally owned and operated water quality treatment and flow control facilities and catch-basins at frequency required in the Permit.
- Establish and implement practices to reduce stormwater impacts associated with maintenance operations for streets, parking lots, roads or highways owned or maintained by the City.
- Establish and implement policies to reduce pollutants in runoff from all lands owned or maintained by the City.
- Develop and provide training to assist staff in implementing practices and policies to reduce pollutants in runoff from maintenance operations.
- Develop and implement a Stormwater Pollution Prevention Plan (SWPP) for all heavy equipment maintenance or storage yards, and material storage yards, and material storage facilities owned or operated by the City.

### 6.2 CURRENT ACTIVITIES

Kirkland currently has programs that meet Permit requirements including the following:

- The City Operations and Maintenance (O&M) Program takes steps to minimize pollutants in runoff from City activities as noted in the *ESA Regional Road Maintenance Program Guidelines*, which are being used though they have not been formally adopted.
- Water quality treatment and flow control facilities are inspected, and are cleaned and repaired as necessary.
- Catch-basins are inspected and cleaned at a rate that will meet Permit requirements.
- O&M staff have attended training associated with pollutant reduction.
- A Stormwater Pollution Prevention Plan (SWPPP) has been developed and implemented for City Maintenance Facilities that qualify as "heavy equipment maintenance or storage yards, and materials storage facilities."
- The Parks Department and Public Works Departments use Integrated Pest Management and other techniques to minimize pollutant discharge from landscaped areas on City properties.
- The City has a list of all publicly-owned properties for use in evaluating potential for and reducing pollutant runoff.
- Through the Developer's Forum, a quarterly meeting, Kirkland provides information and updates on proposed changes to design requirements, and discussion and information concerning Low Impact Development techniques.
- Maintenance standards were updated effective January 1, 2010.

### 6.3 PLANNED ACTIVITIES

Kirkland Currently has programs that seek to reduce pollutants in runoff from City facilities and maintenance practices, but in order to maintain continued compliance with the Permit, the following will be needed:

- Continue to review and revise practices to reduce impacts from runoff or maintenance practices associated with municipally owned or operated streets, parking lots, and roads.
- Continue to review and update operation and maintenance practices for municipally-owned lands in order to reduce pollutants in runoff.
- Continue to implement training programs for staff whose work could impact stormwater quality.
- Update tracking and documentation methods and procedures associated with inspection, maintenance or repair activities.

**TABLE 6.1****POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS WORK PLAN FOR 2010**

Item ID	Item Title	Additional Departments Involved	Schedule Notes
MUNI-1	Review inspection frequencies for water quality treatment and flow control facilities and revise if needed.	none	On-going
MUNI-2	Review maintenance and operation practices to reduce pollutant runoff from City streets	none	On-going
MUNI-3	Review maintenance and operation practices for City-owned lands and review if necessary to reduce pollutants in runoff	Fire/Building, Parks	On-going
MUNI-4	Develop and implement training program for City staff whose work could impact water quality	none	On-going
MUNI-5	Summarize annual activities for "Pollution Prevention and Operation and Maintenance for Municipal Operations" portion of Annual report; update SWMP as needed		The SWMP and Annual Compliance Report submittal is due by March 31st of each year
MUNI-6	Update tracking and documentation methods and procedures associated with inspection maintenance or repair activities	none	On-going

## 7. MONITORING

### 7.1 PERMIT REQUIREMENTS

The Permit (Section S8) requires jurisdictions to prepare for future comprehensive long-term monitoring of both stormwater and of Stormwater Management Program (SWMP) Effectiveness. Stormwater monitoring is intended to characterize stormwater runoff quantity and quality at a limited number of locations in a manner that allows analysis of loadings and changes in conditions over time and generalization across the permittees' jurisdictions. SWMP effectiveness monitoring is intended to improve stormwater management efforts by evaluating issues that significantly affect the success of, or confidence in, stormwater controls. Monitoring is not technically part of the SWMP, but is required by the Permit. Specifically, Kirkland must prepare for monitoring by doing the following:

- Identify two outfalls (representing commercial and high-density residential land uses) where permanent stormwater sampling stations could be established.
  - Document why these stormwater sampling sites were selected; possible site constraints for installation of an access to monitoring equipment; a brief description of the contributing drainage basin including size in acreage, dominant land use, and other contributing land uses; any water quality concerns in the receiving water of each selected outfall or conveyance.
- Identify two suitable questions concerning SWMP effectiveness and select sites where monitoring to answer these questions will be conducted. The questions shall be designed to answer 1) how effective is a targeted action or narrow suite of actions? And 2) Is the SWMP achieving a targeted environmental outcome? Develop a monitoring plan for each question.

Kirkland is required to provide information in the Annual Report concerning the following

- Any stormwater monitoring or studies conducted by the City during the reporting period.
- An assessment of the appropriateness of the best management practices identified by the City for components of the Stormwater Management Program and any changes that are made or are anticipated to be made to the practices that were previously selected to implement the Program and why those changes are desirable.

### 7.2 CURRENT ACTIVITIES

Kirkland currently has activities and programs that meet the Permit requirements. The current compliance activities associated with the above include:

- The City participates in regional and state monitoring forums to develop feasible and effective future monitoring requirements as an alternative to those proposed in the current Permit.
- Identified two outfalls (representing commercial and high-density residential land uses) where permanent stormwater sampling stations could be established.
- Identified two questions regarding SWMP effectiveness and site where monitoring can be conducted and develop a monitoring plans for the questions.

### 7.3 PLANNED ACTIVITIES

In order to maintain Permit compliance, the following activities will be required:

- Submit a report detailing why these stormwater sampling sites were selected; possible site constraints for installation of an access to monitoring equipment; a brief description of the contributing drainage basin including size in acreage, dominant land use, and other contributing land uses; any water quality concerns in the receiving water of each selected outfall or conveyance.

**TABLE 7.1**  
**MONITORING WORK PLAN FOR 2011**

Item ID	Item Title	Additional Departments Involved	Schedule Notes
MNTR-1	Identify 2 outfalls representing commercial and high-density residential land uses where permanent stormwater sampling stations can be installed and operated for future monitoring.	none	Submit information as part of report detailed in MNTR-2
MNTR-2	Submit a report detailing why these stormwater sampling sites were selected; possible site constraints for installation of an access to monitoring equipment; a brief description of the contributing drainage basin including size in acreage, dominant land use, and other contributing land uses; any water quality concerns in the receiving water of each selected outfall or conveyance.	none	Include report as part of the 2010 Annual Compliance Report submittal which is due on March 31, 2011
MNTR-3	Identify two questions regarding SWMP effectiveness and site where monitoring can be conducted and develop a monitoring plans for the questions.	none	Begin in 2009 to implement by February 15, 2010
MNTR-4	Summarize annual activities for "Monitoring" portion of Annual Compliance Report; update SWMP as needed	none	The SWMP and Annual Compliance Report submittal is due on or before March 31st of each year

# APPENDIX A

## Public Comment:



### DENNY CREEK NEIGHBORHOOD ALLIANCE

March 23, 2011

To: City of Kirkland Public Works Department  
 From: Denny Creek Neighborhood Alliance  
 Cc: Denny Creek Neighborhood Alliance Board of Directors

**Re: Comments on 2011 Kirkland Storm Water Management Program**

Denny Creek Neighborhood Alliance (DCNA) is a neighborhood non-profit organization that promotes responsible management of natural resources, organizes neighborhood improvement projects, and conducts environmental education activities. Our members are residents of the Finn Hill area which is to be annexed by the City of Kirkland on June 1, 2011. I am responding on DCNA's behalf to the invitation to comment on Kirkland's draft 2011 Storm Water Management Program (SWMP). This letter communicates our comments.

In 2007, DCNA published a comprehensive survey of the O.O. Denny Creek watershed. For your review, we are enclosing a copy of the final report with this letter. Of particular interest to the SWMP, note that the comprehensive survey of the storm water piping system in the Denny Creek watershed was performed using Kirkland's contractor and Kirkland's method of recording storm water facilities. The O.O. Denny Creek watershed survey report was presented to the King County Executive and King County Council, with copies to the Department of Natural Resources and Parks (DNRP) and Water and Land Resources Division (WLRP), among others.

DCNA comments on the 2011 City of Kirkland SWMP are as follows:

- We note on page 7 that "Kirkland this year will also be preparing for a major annexation which will become effective on June 1, 2011" and "Transition of surface water services for this area and coordination of Permit compliance needs will be a major focus of surface water staff in 2011."
- We wish the City to be aware of our findings that the water quality in Denny Creek is likely to be superior to any other stream in the region. Our findings confirmed that Denny Creek is a suitable salmon spawning resource if properly managed and cared for. However, we also found major problems with the management and control of surface water runoff in the Denny Creek watershed that has resulted from rapid population growth in recent years.

Examples of these problems include:

- Loss of wetlands by allowing development in or adjacent to wetlands (within 50 ft.).
- Loss of riparian areas by allowing variances for development.
- Private properties experiencing erosion damage due to runoff from out-falls.
- Clear cutting of trees and vegetation due to lack of monitoring of construction sites.
- Inadequate or defective storm detention/retention ponds or vaults.
- Myopic reviews of proposed design for handling storm water.

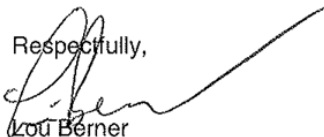


## DENNY CREEK NEIGHBORHOOD ALLIANCE

- The Finn Hill area is primarily residential and park land. The neighborhood is less impacted by commercial use compared to other neighborhoods in Kirkland.
- In addition to monitoring and controlling the introduction of pollutants to the storm water drainage system, we have noted and documented a significant need for improved control of the surface runoff before it reaches Denny Creek and Lake Washington. These needs specifically include the construction of tight-lines where bank erosion is occurring, and overhaul of multiple ineffective storm water catchment basins scattered throughout the Denny Creek watershed. There are several locations in the Finn Hill neighborhood where management of surface runoff needs immediate attention. Question: Will King County continue their ownership of storm water catchments in this neighborhood, or will they be turned over to Kirkland when annexation takes place?
- Kirkland's SWMP must be much more specific regarding actions to be taken in 2011 in the area to be annexed. Furthermore, storm water management issues in Denny Creek and in the greater Finn Hill neighborhood are likely to be similar to issues that should be addressed across the city of Kirkland. Without the addition of specific changes that should be made - including timelines for the projects - the 2011 Kirkland SWMP program is incomplete and is likely to be ineffective.
- In SWMP Table 1, section SS.C.3 of the implementation timeline, please consider Denny Creek for the item: **"Field assessment of one priority water body"** in Q2 of 2012. Also consider an assessment of the beaver ponds north of Finn Hill Junior High in the Denny Creek watershed. The beaver ponds are in the center of a significant multiple use area subject to increasing interaction between hikers, bikers, dog walkers, school-kid foot commuters, and the resident beaver population.
- In SWMP Table 1, section SS.C.5 of the implementation timeline, please notify DCNA leadership or e-mail [louisb@microsoft.com](mailto:louisb@microsoft.com) when the following Q2 of 2012 item is scheduled for the Finn Hill neighborhood: **"Inspect all catch basins and inlets"** as we would like to participate in the inspections.
- In SWMP Table 2.1, **"Current education and outreach programs"**, it would be helpful to find out how DCNA can participate in the following activities:
  - Storm drain stenciling
  - Natural yard care neighbors program
  - Booths and displays at various special events
  - Volunteer stewardship programs

We appreciate having the opportunity to comment on Kirkland's draft 2011 Storm Water Management Program. DCNA looks forward to working with the City of Kirkland in the future to promote the responsible management of surface water runoff and the restoration of our neighborhood's streams and wetlands.

Respectfully,



Lou Berner

Enclosure: Denny Creek Watershed Survey Report (April 2007)

P.O. Box 682, Kirkland, WA 98083

[www.dennycreek.org](http://www.dennycreek.org)



## Response to Public Comment:

March 28, 2011

Lou Berner – Denny Creek Neighborhood Alliance  
P.O. Box 682  
Kirkland, WA 98033



Dear Mr. Berner:

Thank you for taking the time to comment on the 2011 Stormwater Management Program (SWMP). I appreciate that the Denny Creek Neighborhood Alliance has put so much time and effort into investigation and management of the Denny Creek watershed, and look forward to working with you to further improve conditions. The following are responses to your comments.

The SWMP is a regulatory compliance document that is intended to show how the City will meet specific requirements in the Western Washington Phase II Municipal Stormwater Permit (NPDES Permit). The NPDES Permit is specific to stormwater discharges and requires actions in the following areas:

- Public Education
- Public involvement
- Illicit Discharge Detection and Elimination
- Controlling Runoff from New Development, Redevelopment and Construction Sites
- Pollution Prevention and Operation and Maintenance for Municipal Operations

The concerns you raise regarding land use (loss of wetlands and riparian areas) and the need for retrofit projects for existing problems are very important, however these issues are not addressed in the NPDES permit. City staff is very aware of these general issues, and look forward to meeting with you to learn more about specific problem areas in Finn Hill.

Apart from the NPDES Permit are overall City plans and programs for managing surface water, which include actions to address flooding, water quality improvement, and fish habitat restoration. One of the first actions that will take place following annexation will be to identify surface water needs in the annexation area, including both programs and projects. Staff has already been talking with residents, visiting problem spots, and gathering records and information from King County. We look forward to bringing staff onboard following the June 1 annexation date to develop specific timeframe and goals for this work.

The SWMP for 2011 consists largely of on-going programs to address stormwater quality concerns. Deadlines included in the SWMP are only those contained in the NPDES Permit, many of which have passed and all of which the City has met. I would be happy to meet with you to discuss specifics of how and when programs will be implemented in the annexation area. Some activities such as mapping of the stormwater system are already underway.

We will consider Denny Creek for the item "field assessment of one priority water body." At the same time, please know that this work is intended to identify illicit discharges (i.e. anything not composed of stormwater) to the stormwater system, and field assessments are supposed to be carried out in those watersheds that are most likely to have illicit discharges based on land use



Page 2 of 2

Letter from Jenny Gaus to Lou Berner - Denny Creek Neighborhood Alliance  
March 28, 2011

and complaint history. As you note, water quality in Denny Creek has been found to be superior to any other stream in the region, and land use is primarily residential and park land. This lowers this creek as a priority for outfall screening. Certainly if you see any indication of illicit discharges, please contact our office immediately at (425) 587-3800 and we will investigate the situation.

If you have specific questions about the catch-basin inspection process, or would like to see a report or map of the results of the inspections, we would be happy to accommodate you by providing this information. Inspection and cleaning of catch-basins in your area sufficient to meet NPDES Permit requirements may have already been performed by King County (staff are checking into this). We can inform you in a general way of when catch-basin inspection and cleaning will take place (i.e. during the summer), but due to the complexities of scheduling maintenance crews we cannot give you specific dates/times that the work will take place. In addition, inspection and cleaning of catch-basins in the public right of way is performed by crews operating an eductor truck, which is a large noisy and dangerous piece of equipment. The city cannot allow ride-alongs on this piece of equipment, and would not want to put citizens in danger by having them near this piece of equipment while it is in operation.

Please feel free to contact Betsy Adams at (425) 587-3858 to discuss surface water education/outreach and stewardship programs that you mention in your letter. She plans many activities each year and would welcome your participation.

Should you have further comments or questions, feel free to contact me at (425) 587-3850 or [jgaus@ci.kirkland.wa.us](mailto:jgaus@ci.kirkland.wa.us). Thank you for your interest in (soon to be) Kirkland's water resources.

Sincerely,  
City of Kirkland



Jenny Gaus, PE CSM  
Surface Water Engineering Supervisor